

**Sex-influenced Protibial Spines  
And Synonymy in Dasytidae (Coleoptera),  
Study Number Three**

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*Abstract.*—Protibial spines are sex-influenced in many populations of *Emmenotarsus* and *Trichochrous*. In the extreme case, they are found to be sex-limited to females in *Listropsis*, an emmenotarsus-like genus. This led to the discovery that *Listropsis* and *Trichochroides* are synonymous, and *Trichochroides* must be suppressed on basis of priority.

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Considerable confusion exists in the systematics of Dasytidae. Synonymy of some species was noted by Fall (1901) and more can be expected since many species were based by Casey (1895) on only one specimen. What effect the synonymy may have on the total number of species is uncertain, for new collections continue to reveal populations so different from those described as to require the addition of new specific names (e.g. Howell, 1979).

Adding to the confusion, some populations contain a tremendous variety of morphs, species, and even genera. Howell (1985) reports finding seven genera of Dasytidae in the flowers of one bush of *Ceanothus*; and nine morphs of one genus, *Eschatocrepis*, in a small local area. The present study describes a situation in which males and females of the same species can be keyed to different genera.

This came about by using the characteristic “protibiae beset with spines” in current keys (Casey, 1895; Blaisdell, 1938) to separate two fairly large divisions of Dasytidae. Among the genera with spines is *Trichochrous*, the largest dasytid genus according to Casey. Among those lacking them is *Amecocerus* (*Listrus*, in Blaisdell, 1921), which is the second largest.

Blaisdell (1938) subdivided *Trichochrous* into several genera, among which *Emmenotarsus* was set apart for its bristling fringes and shaggy appearance. At the same time he selected *Trichochrous sexualis* Casey, also emmenotarsus-like, as the type of the genus *Trichochroides* which is defined by a male-limited feature, a striking impression on the fifth abdominal sternite. Earlier, Blaisdell (1924a, 1924b) described species of *Listropsis*, based on males lacking protibial spines. This latter feature led him to underestimate the obvious emmenotarsus-like appearance of *Listropsis* based on males lacking protibial spines. This latter feature led him to underestimate the obvious emmenotarsus-like appearance of *Listropsis* and to place it among listrus-like genera.

A study of the number of spines on protibiae led me to discover that in many species of *Trichochrous* and *Emmenotarsus* the number of spines on the protibiae is sex-influenced, females having significantly more than males. The number may vary

from zero to over a dozen, so that specimens at the extremes, at least, would end up in widely different genera if keyed individually.

This challenged me to devise a key avoiding a major reliance on protibial spines. Such a key is in use in our laboratory and appears to be as reliable as Blaisdell's (1938) key. It brings *Trichochrous* and *Amecocerus* close to each other, which is concordant with their gross similarity. It also brings *Listropsis* close to *Emmenotarsus*, which resemble each other.

The significance of this latter relation was long undetected, for my early collections of these two genera consisted of small collections composed wholly or largely of one sex. Later, obtaining a larger bisexual collection, I sexed it and discovered that all the males keyed into *Listropsis* and all the females into *Emmenotarsus*. This collection was made above the 5000 foot elevation on Mt. Pisgah, near Yucaipa, San Bernardino County, CA. On reviewing all my collections from this same area, I found a total of 109 *Emmenotarsus*-like specimens in seventeen separate collections made between 1969 and 1981.

A disproportionate sex ratio was found in these 109 specimens with 80 males and only 29 females. The feature, "protibiae beset with spines" was sex-limited to females, which had an average of 6.1 spines per protibia, as compared with 0.3 in males. All the males had the fifth sternite impressed. Therefore, I concluded that the specimens represented a population of *Trichochroides* according to Blaisdell, and that *Listropsis* and *Trichochroides* are synonyms.

This conclusion was further substantiated on examination of specimens available to me, which Blaisdell had labelled *Trichochroides*. In all examples in which males were present, they keyed to *Listropsis*, and the females to *Emmenotarsus*. On reviewing Blaisdell's descriptions of *Trichochroides* (1941) I found that he never once made a reference to protibial spines, and thus missed the relationship of these two genera.

These observations all support the conclusion that *Listropsis* and *Trichochroides* are synonyms. By rules of priority *Trichochroides* must be suppressed and be replaced by *Listropsis*.

The Mt. Pisgah collection is believed to be *Listropsis virilis* (Blaisdell, 1941), formerly *Trichochroides*.

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